

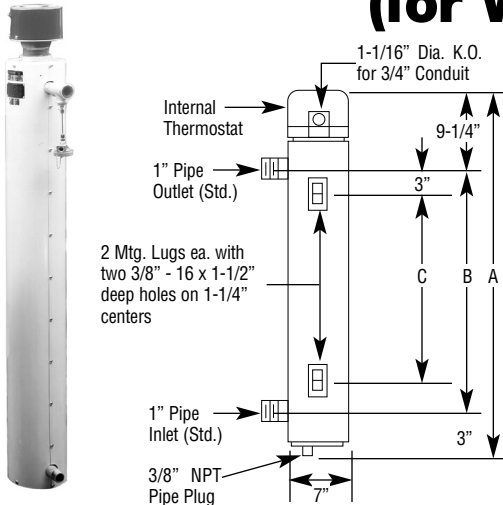
Chromalox®

Installation, Operation and MAINTENANCE INSTRUCTIONS

SERVICE REFERENCE

DIVISION 4	SECTION NWHMT	
SALES REFERENCE	(Supersedes PE439-1)	PE439-2
161-303186-001		
DATE	APRIL, 1999	

Type NWHMT Circulation Heater (for Water Heating)



Specifications — Table A

Model	Volts	Phase	kW	W/in ²	Dimensions (In.)		
					A	B	C
NWHMT-3305	120, 240 or 480	1 or 3	3	50	21-5/8	9-3/8	—
NWHMT-3455	240 or 480	1 or 3	4.5	50	21-5/8	9-3/8	—
NWHMT-3605	240 or 480	1 or 3	6	50	34-3/4	22-1/2	16-1/2
NWHMT-3905	240 or 480	1 or 3	9	50	34-3/4	22-1/2	16-1/2
NWHMT-31205	240 or 480	1 or 3	12	50	57-1/2	45-1/4	39-1/4
NWHMT-31505	240 or 480	1 or 3	15	50	57-1/2	45-1/4	39-1/4
NWHMT-31805	240 or 480	1 or 3	18	50	57-1/2	45-1/4	39-1/4

GENERAL

WARNING: This heater is not intended for use in hazardous atmospheres where flammable vapors, gases, liquids or other combustible atmospheres are present as defined in the National Electrical Code. Failure to comply can result in explosion or fire.

Hazardous area terminal housings are available, consult your Local Chromalox representative for details.

The NWHMT series is a general-purpose water circulation heater intended for use indoors.

The three Copper sheathed tubular elements are centered in a 2-1/2" diameter galvanized heating chamber and sealed in a removable screwplug. The assembly is surrounded by 1-1/2" insulation and sheet

metal jacket.

Depending upon the specifications, the NWHMT may or may not be factory equipped with AR or other Chromalox thermostats. Such thermostats function to control outlet temperatures and limits internal temperatures under abnormal flow conditions. These controls do not fail-safe.

CAUTION: Users should install adequate back-up controls and safety devices with their electric heating equipment. Where the consequences of failure may be severe, back-up controls are essential. Although the safety of the installation is the responsibility of the user, Chromalox will be glad to make equipment recommendations.

INSTALLATION

WARNING: Hazard of Shock. Disconnect all power before installing heater.

1. Vertical mounting (axis of chamber vertical, see above drawing.) is preferred with terminal housing at top of heater (Figure 1).
2. When mounting heater horizontally, inlet and outlet pipes **must** be up. In any other position, heater cannot be purged of air and ele-

ments may be seriously damaged (Figure 2).

3. The NWHMT series of circulation heaters are provided with mounting lugs to support the heater chamber. Refer to drawing above for location of these mounting lugs.
4. Mount heaters to permit unrestrained expansion of chamber due to temperature. This can be accomplished by using a slotted mounting assembly on either of the lugs.

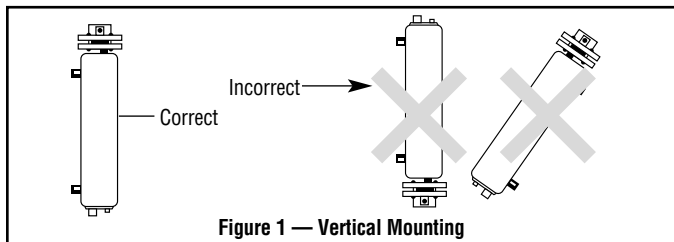


Figure 1 — Vertical Mounting

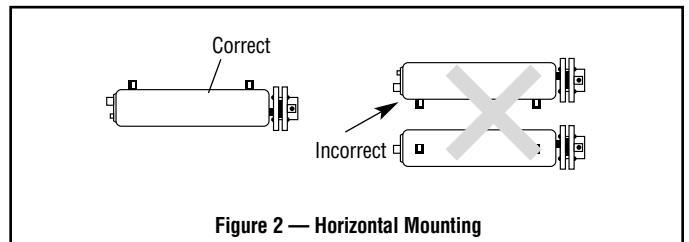


Figure 2 — Horizontal Mounting

INSTALLATION

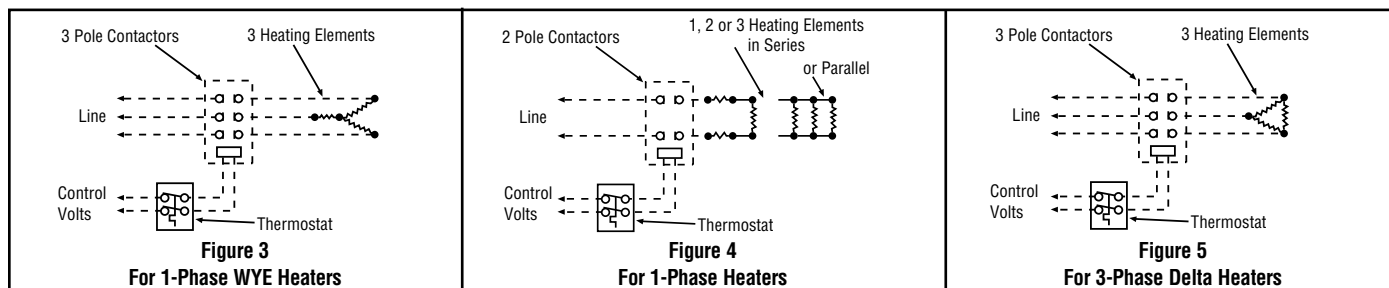
5. **DANGER: Hazard of Fire.** Provide minimum of 6" spacing from a chamber and related piping to nearest combustible material. Avoid operation of heater near combustible fluids or in combustible vapor or gas laden atmosphere.
6. Provide adequate space at terminal end to permit withdrawal of the heater from chamber should servicing be required.
7. If two or more heaters are needed to provide the needed heating capacity, arrange them for series water flow.
8. **DANGER: Possible Explosion.** A pressure relief valve should be provided by customer at outlet of vessel. There should be no other valving between vessel and valve.

WIRING

WARNING: Hazard of Shock. Any installation involving electric heaters must be effectively grounded in accordance with the National Electrical Code to eliminate shock hazard.

1. Electrical wiring to heater must be installed in accordance with the National Electrical Code and/or local electrical codes by a qualified person as defined in the NEC.
2. When element wattages are not equal, heaters must not be connected in series.

3. Electrical wiring to heater should be connected in rigid conduit or in flexible hose to keep corrosive vapors and liquids out of the terminal housing. If high humidity is encountered, the conduit should slope down away from the heater.
4. If flexible cord is employed, a watertight connector should be used for entry of the cord into the terminal housing. Outdoor applications require liquid-tight conduit and connectors.
5. Bring the power line wires through the opening in the terminal housing. Connect line wire as shown in Figures 3 through 5.



NOTE: Dotted lines indicate "customer furnished."

OPERATION

1. Do not heat materials that are corrosive to the heating element sheath or chamber. For water heating service, condensate drain may be provided from bottom of chamber. Check factory.
2. Terminal ends of heater must be protected from drippings, condensation spray or direct spill-over of material whose presence at the terminals may damage heater electrical insulation. Liquid-tight terminal housings are available to protect heater. Check with Local Chromalox Sales representative.
3. If foreign material is carried by the gaseous flow, install suitable filters in the inlet pipe to the heater.
4. Do not allow heater to operate when fluid flow is interrupted.

MAINTENANCE

WARNING: Hazard of Shock. Disconnect all power before servicing heater.

1. Remove heating element assembly periodically to check heater sheath for corrosion or excessive oxidation. Correct operating conditions to minimize sheath deterioration.
2. Periodically check temperature control and limit control operation to insure accurate and safe process operation.
3. Check all electrical connections periodically and retighten connections which may have loosened in service. Replace wire terminals which show signs of oxidation which would interfere with establishment of reliable electrical connections.

RENEWAL PARTS IDENTIFICATION

Thermostat AR-215 60-250°F.....300-048518-013

Limited Warranty:

Please refer to the Chromalox limited warranty applicable to this product at http://www.chromalox.com/customer-service/policies/terms_of_sale.aspx.

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PRECISION HEAT AND CONTROL

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